

WHAT IS CLAIMED IS:

1. An apparatus for setting a battery alarm voltage for a mobile information terminal that is capable of communicating with a battery management server, wherein

5 the mobile information terminal includes

a battery voltage detecting unit that detects a voltage of a battery;

an alarm voltage detecting unit that detects a battery alarm voltage for alarming a voltage drop of the battery;

10 a suspend voltage detecting unit that detects a suspend voltage at which the mobile information terminal enters a suspend state following the voltage drop of the battery; and

a terminal communication unit that transmits the voltage of the battery detected to the battery management server, and

15 the battery management server includes

a voltage controller that automatically sets the battery alarm voltage based on the voltage of the battery detected; and

a server communication unit that transmits the battery alarm voltage set to the mobile information terminal.

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2. The apparatus according to claim 1, wherein the voltage controller further includes

an estimating unit that estimates a time-varying discharge transition from the battery alarm voltage to the suspend voltage based

25 on the voltage of the battery detected; and

a setting unit that sets the battery alarm voltage based on the time-varying discharge transition estimated.

3. The apparatus according to claim 1, wherein the battery alarm  
5 voltage is set to a voltage at which the mobile information terminal lasts a predetermined operation time from the battery alarm voltage to the suspend voltage.

4. The apparatus according to claim 1, wherein the setting unit has  
10 a mechanism that the battery alarm voltage is manually set to an arbitrary voltage.

5. The apparatus according to claim 1, wherein the mobile  
information terminal further includes  
15 a storage unit that obtains and stores the battery alarm voltage,  
and  
a rewriting unit that rewrites the battery alarm voltage stored in  
the storage unit.

20 6. The apparatus according to claim 5, wherein the battery alarm voltage stored in the storage unit is rewritable by either of an input unit of the mobile information terminal and an external medium.

7. The apparatus according to claim 5, wherein the mobile  
25 information terminal further includes

a comparing unit that compares a value of the battery alarm voltage set by the setting unit with a value of the battery alarm voltage rewritten by the rewriting unit.

- 5     8.     The apparatus according to claim 7, wherein the mobile information terminal further includes

a notification unit that makes a notification of an operation status on the mobile information terminal, wherein

- when the battery alarm voltage set by the setting unit coincides  
10 with the battery alarm voltage rewritten by the rewriting unit from a result of a comparison by the comparing unit, the notification unit notifies a completion of setting of the battery alarm voltage.

9.     The apparatus according to claim 8, wherein the notification unit  
15 notifies the completion of setting of the battery alarm voltage by a message display.

10.    The apparatus according to claim 8, wherein the notification unit notifies the completion of setting of the battery alarm voltage by a  
20 sound through a speaker.

11.    The apparatus according to claim 5, wherein upon the mobile information terminal receiving of an information that a manual setting is carried out from the battery management server, the rewriting unit does  
25 not accept an updating of the battery alarm voltage until the manual

setting is released.

12. The apparatus according to claim 7, wherein when the battery alarm voltage set by the setting unit coincides with the battery alarm  
5 voltage rewritten by the rewriting unit from a result of a comparison by the comparing unit, the rewriting unit rewrites the battery alarm voltage stored in the storage unit.

13. The apparatus according to claim 12, wherein the battery alarm  
10 voltage set by the setting unit is smaller than a preset battery alarm voltage and larger than the suspend voltage.

14. The apparatus according to claim 13, wherein  
the setting unit further has a function of setting a lower limit of  
15 the battery alarm voltage, and  
when the battery alarm voltage set is smaller than the lower limit,  
the setting unit sets the battery alarm voltage again.

15. The apparatus according to claim 1, wherein the mobile  
20 information terminal is any one of a notebook-size personal computer, a personal digital assistant, an electronic note, and a mobile phone.

16. A method of setting a battery alarm voltage for a mobile  
information terminal that is capable of communicating with a battery  
25 management server, the method comprising:

- detecting a voltage of a battery;
- detecting a battery alarm voltage for alarming a voltage drop of the battery;
- detecting a suspend voltage at which the mobile information
- 5 terminal enters a suspend state following the voltage drop of the battery;
- transmitting the voltage of the battery detected to the battery management server;
- setting automatically the battery alarm voltage based on the
- 10 voltage of the battery detected; and
- transmitting the battery alarm voltage set to the mobile information terminal.